

# Breastfeeding and Medication



## Narcolepsy and Breastfeeding

Narcolepsy is a rare long-term brain condition that causes a person to suddenly fall asleep at inappropriate times.

### Symptoms

The brain is unable to regulate sleeping and waking patterns normally, which can result in:

- excessive daytime sleepiness – feeling very drowsy throughout the day and finding it difficult to concentrate and stay awake
- sleep attacks – falling asleep suddenly and without warning
- cataplexy – temporary loss of muscle control resulting in weakness and possible collapse, often in response to emotions such as laughter and anger
- sleep paralysis – a temporary inability to move or speak when waking up or falling asleep
- excessive dreaming and waking in the night – dreams often come as you fall asleep (hypnagogic hallucinations) or just before or during waking (hypnopompic hallucinations)

### Background

There is no cure for narcolepsy. However, various treatments are available that can help to control symptoms. These include stimulant medicines to stop the feeling of excessive sleepiness, which is difficult to manage with a baby,

People with narcolepsy have been found to have reduced levels of a neurotransmitter chemical called hypocretin in their brain. Hypocretin helps to control the sleep-wake cycle. It has been suggested that narcolepsy may be a type of autoimmune disease where there is damage to the cells in the brain that produce hypocretin. Narcolepsy is not common. It is thought to affect around 25 people per 100,000. Narcolepsy seems to affect both men and women equally. It is most commonly diagnosed in the teenage years.

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## Treatment

It is recommended that anyone with narcolepsy aim to have 8 hours of uninterrupted night time sleep as well as scheduled daytime naps ( <https://patient.info/mental-health/narcolepsy-and-cataplexy-leaflet#nav-3>). With a child this is most unlikely to be achievable.

**Modafinil** is the most common medicine now used to treat sleepiness in narcolepsy. It works as a stimulant and helps to stop the feeling of sleepiness. There is one published study of armodafinil the R enantiomer of modafinil. A woman took the drug throughout pregnancy and during breastfeeding. The half-life was determined as 15 hours, the plasma protein binding as 60% and the relative infant dose 5.3%. There were no reported complications in the baby. [Aurora S, Aurora N, Datta P, Rewers-Felkins K, Baker T, Hale TW. Evaluating transfer of modafinil into human milk during lactation: a case report. J Clin Sleep Med. 2018 Dec;14(12):2087-2089. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6287734/>].

Older stimulant medicines used to treat narcolepsy include methylphenidate and amphetamines.

**Methylphenidate** (Ritalin™, Concerta™); works by increasing the amount of a dopamine in the parts of the brain responsible for self-control and attention. It is usually the first line treatment. There are side effects of loss of appetite and difficulty sleeping and mood swings. Limited evidence indicates that methylphenidate levels in milk are very low and not detectable in infant serum. The effects of methylphenidate in milk on the neurological development of the infant have not been well studied. Monitor the baby for agitation, irritability, poor sleeping patterns, changes in feeding and poor weight gain.

**Dexamphetamine (Adderall™)**. Side effects include decreased appetite, mood swings, agitation and aggression, dizziness, headaches, nausea, vomiting and diarrhoea. Only used if Lisdexamphetamine is helpful but not tolerated. In dosages prescribed for medical indications, some evidence indicates that dextroamphetamine might not affect nursing infants adversely. The effect of dextroamphetamine in milk on the neurological development of the infant has not been well studied. It is possible that large dosages of dextroamphetamine might interfere with milk production. Infant Monitoring for agitation, hyperactivity, insomnia, decreased appetite, weight gain, and tremor.

**Lisdexamphetamine (Vyance™)** may be offered as first line treatment in adults. Side effects include decreased appetite, aggression or drowsiness, dizziness, headaches, nausea, vomiting and diarrhoea. Lisdexamphetamine is a prodrug of dextroamphetamine. In medicinal dosages, some evidence (5 mothers studied) indicates that dextroamphetamine might not affect nursing infants adversely. The effect of dextroamphetamine in milk on the neurological development of the infant has not been well studied. Infant Monitoring should be for agitation, irritability, poor sleeping patterns and poor weight gain.

**Sodium Oxybate (Xyrem™)** is a rapidly acting central nervous system depressant. Its mechanism of action is unknown but theorized to involve interactions with GABA-B receptors in the brain. No data are available on the transfer of oxybate to breast milk, but it is likely this medication will be secreted into milk and passed to a breastfeeding infant. Due to the sedative properties of this drug, this product should be used very cautiously in breastfeeding mothers, if at all (Hale Medications and Mother's Milk). However LactMed (<https://www.ncbi.nlm.nih.gov/books/NBK500802/>) states that "Infants have been successfully breastfed by mothers taking sodium oxybate therapeutically for narcolepsy. With the typical 2 doses per night treatment regimen, nursing should usually be

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withheld from the time of the first dose to 4 to 6 hours after the second dose and breastfeeding can be continued during the day. (Swick TJ. Postnatal treatment of women with narcolepsy who choose to breastfeed-time for a reappraisal? Sleep Med. 2017;36:178–9).

Half life 0.5-1 h, plasma protein binding <1%

**Solriamfetol:** The National Institute for Health and Care Excellence (NICE) has looked at the evidence for using solriamfetol, which works in a different way to these drugs. It has advised that for adults who cannot take or have not responded to modafinil and at least one stimulant medicine, solriamfetol should be recommended as an option (Solriamfetol for treating excessive daytime sleepiness caused by narcolepsy TM 758 Jan 2022 <https://www.nice.org.uk/guidance/ta758>) . This guidance only applies to adults who have narcolepsy and excessive daytime sleepiness. There is no data on passage into breastmilk.

## SPS Safety in Lactation: Drugs for sleeping disorders

<https://www.sps.nhs.uk/articles/safety-in-lactation-drugs-for-sleeping-disorders/>

Drugs for narcolepsy: The preferred drug for narcolepsy in breastfeeding mothers is dexamfetamine, although the evidence for safety in breastfeeding is limited. Infants should be monitored for symptoms of CNS stimulation (except sodium oxybate), although these may be difficult to detect. High doses may interfere with lactation, although this is not confirmed in practice.

## Further information

National Congenital Anomaly and Rare Disease Registration Service (NCARDRS) :

<https://www.gov.uk/government/publications/national-congenital-anomaly-and-rare-disease-registration-service-introductory-leaflet>

Narcolepsy UK : <https://www.narcolepsy.org.uk/>

NHS Narcolepsy : <https://www.nhs.uk/conditions/narcolepsy/>

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